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Defense Primer: Under Secretary of Defense for Research and Engineering

Advances in science and technology (S&T) have long played a critical role in ensuring the technological preeminence of the U.S. military. The Department of Defense (DOD), which is "using a secondary Department of War designation" under Executive Order (EO) 14347 of September 5, 2025, is the largest funder of federal research and development.

Over the last several years, policymakers and others have expressed concern that the long-held technological edge of the U.S. military is eroding. In part, this concern is due to the proliferation of technologies developed outside the defense sector (e.g., artificial intelligence), organizational and cultural barriers to DOD effectively incorporating and exploiting commercial innovations, and insufficient engagement with leading-edge companies that have not historically been a part of the DOD innovation system.

The Under Secretary of Defense for Research and Engineering (USD (R&E)), who is using Under Secretary of War for Research and Engineering as a "secondary title" under EO 14347, is a civilian official reporting directly to the Secretary of Defense, who is using "Secretary of War" as a "secondary title" under EO 14347. The USD (R&E) serves as the principal advisor to the Secretary of Defense for DOD research, engineering, and technology development activities and programs. The positioning of the USD (R&E) as the third-highest-ranking DOD official—behind the Secretary and Deputy Secretary in all matters for which the Under Secretary has responsibility—is intended to promote faster innovation and to increase the department's risk tolerance in the pursuit of new technologies.

Origin of the USD (R&E) Position

Leadership of DOD research, engineering, and technology development activities and functions within the Office of the Secretary of Defense has varied over the course of DOD's history. For example, there was a USD (R&E) from 1977 to 1986 and an Assistant Secretary of Defense for R&E from 2011 through 2016. Reestablishment of the position of the USD (R&E) in 2016 through the National Defense Authorization Act (NDAA) for Fiscal Year 2017 (P.L. 114-328) is the most recent realignment. P.L. 114-328 eliminated the position of the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD (AT&L)) and established the positions of USD (R&E) and the Under Secretary of Defense for Acquisition and Sustainment (USD (A&S)).

In reestablishing the position of USD (R&E), the Senate Armed Services Committee stated (S.Rept. 114-255),

> the committee believes that improving defense innovation requires a greater willingness to experiment and accept risk. Experimentation and even occasional failure cannot be stigmatized, so long as failure occurs quickly, cheaply, and leads to knowledge that can drive toward eventual success. That is a different kind of culture than the pervasive caution and slowness that currently exists across [DOD] acquisition and research enterprises…. The numerous acquisition reform authorities … proposed in this year's [NDAA] are largely focused on empowering the Secretary of Defense to work around DOD's slow and costly acquisition system, to access new centers of innovation and disruptive new technologies in our commercial economy, and to reclaim our eroding defense technological advantage. This was the mission that the [USD (R&E)] once performed so effectively, and the committee believes should be empowered to do again.

In the conference report (H.Rept. 114-840) for the FY2017 NDAA, conferees stated their expectation that the USD (R&E) "would take risks, press the technology envelope, test and experiment, and have the latitude to fail, as appropriate."

USD (R&E) Roles and Responsibilities

According to Title 10, Section 133a, of the *U.S. Code*, the powers and duties of the USD (R&E) include

- "serving as the chief technology officer of [DOD] with the mission of advancing technology and innovation" for the military services and DOD;
- "establishing policies on, and supervising, all … defense research and engineering, technology development, technology transition, appropriate prototyping activities, experimentation, and developmental testing activities and programs and unifying defense research and engineering efforts" across DOD;
- "serving as the principal advisor to the Secretary [of Defense] on all research, engineering, and technology development activities and programs [in DOD]";
- "directing the Secretaries of the military departments and the heads of all other [DOD] elements … with regard to matters for which the Under Secretary has responsibility"; and
- "conducting developmental prototyping, designing and executing experiments of prototypes in the field to demonstrate operational relevance to address joint force capability gaps, and encouraging and supporting the rapid transition of technology from the research and development phase into operational use within [DOD]."

In addition, DOD Directive (DODD) 5137.02 specifies 45 key functions and responsibilities of the USD (R&E) and defines the authorities of the USD (R&E) in relationship to other senior DOD officials. The key functions and

responsibilities outlined in DODD 5137.02 include managing the DOD S&T portfolio "to address near-term and far-term capability gaps against emerging threats"; ensuring that DOD technical infrastructure, scientific and engineering capabilities, and associated resources align with DOD priorities; and "in coordination with the Secretary, and informed by the National Defense Strategy," identifying and defining DOD's modernization priorities.

Organizational Structure of the Office of the USD (R&E)

The organizational and management structures of the Office of the USD (R&E) (OUSD (R&E)) have evolved numerous times from the original structure proposed in a 2017 DOD report to Congress. Most recently, on January 9, 2026, the Secretary of Defense issued a memorandum to "unify the innovation ecosystem led by a single Chief Technology Officer (CTO) tasked to modernize the Department and align innovation organizations around outcomes that matter for the warfighter." The OUSD (R&E) is to consist of three Assistant Secretaries, which include

- an Assistant Secretary for S&T, to lead technology innovation and foundational science;
- an Assistant Secretary for Critical Technologies (to be redesignated as Assistant Secretary for Commercial Technologies), to lead policy for product innovation through commercial adoption; and
- an Assistant Secretary for Mission Capabilities, to lead operational capability innovation.

The memo, in part, (1) designates the Defense Innovation Unit (DIU) and the Strategic Capabilities Office (SCO) as DOD field activities that are supervised by the USD (R&E) and (2) requires the Defense Advanced Research Projects Agency, the Office of Strategic Capital, the Chief Digital and Artificial Intelligence Office, and the Test Resource Management Center as to directly report to the USD (R&E).

According to the OUSD (R&E) website, a number of other offices are supervised by and report directly to the USD (R&E). Such offices include the Missile Defense Agency, the Office of Strategic Intelligence and Analysis, the Office of Systems Engineering and Architecture, and the Office of Developmental Test Evaluation and Assessment.

USD (R&E) and USD (A&S) Relationship

Many observers see a close and cooperative relationship between the USD (R&E) and the USD (A&S) as critical for the efficient and effective delivery of advanced technologies to the warfighter, especially at the fast pace many expect is needed to maintain the United States' technological lead over potential adversaries.

Some have expressed concerns that dividing the roles and responsibilities of the USD (AT&L) into a USD (R&E) and a USD (A&S) will exacerbate the *valley of death* (i.e., the barriers and challenges that exist in bringing a new technology from the research laboratory to full-scale deployment in the Armed Forces). For example, the Obama Administration opposed the change, at the time stating that it "would create dysfunctional partitions across DOD's research, engineering, procurement, and sustainment systems that will make it harder to sustain the Department's improved performance."

In the conference report (H.Rept. 114-840) for the FY2017 NDAA, conferees acknowledged the potential challenges that exist in separating the roles and responsibilities of the USD (AT&L) into the positions of a USD (R&E) and a USD (A&S). However, the conference report asserts that elevating the missions of advancing technology and innovation within DOD, fostering distinct technology and acquisition cultures to better deliver superior capabilities, and providing greater oversight and management of DOD components outside the military services would best be addressed by the creation of two under secretaries. Furthermore, the conferees indicated that any potential barriers or gaps could "be mitigated through effective leadership and management."

In an effort to bridge gaps between the two offices, DODD 5137.02 details their relationship, including requiring the USD (R&E) to advise the USD (A&S) on materiel development, milestone, and production decisions.

Issues for Congress

As Congress considers the impact and effectiveness of reestablishing the USD (R&E) position, it may consider several issues. For example, Congress may examine whether the USD (R&E) has implemented an overarching and coordinated vision for DOD's research, development, testing, and evaluation (RDT&E) activities and programs. A February 2026 report by the Government Accountability Office (GAO) recommended that the USD (R&E) "provide guidance to the military departments on the amount of investment in each critical technology area needed to ensure alignment to the maximum extent practicable with corresponding roadmaps." GAO also recommended that Congress provide the USD (R&E) with budget certification authority for RDT&E activities. Congress might also consider which metrics could be used to determine whether changes in DOD's organizational structure, programs, and processes are successful in maintaining and extending U.S. technological superiority. Potential metrics could focus on if and how DOD has increased its risk tolerance (e.g., are projects "failing fast" and are resources being rapidly redeployed?), the rate at which innovative technologies are transitioned into fielded capabilities and operational use, and the number of collaborations and partnerships with leading-edge technology companies and other entities that have not historically been a part of DOD's innovation ecosystem (e.g., small businesses), among other considerations. Congress could also evaluate the USD (R&E)'s efforts to attract and retain scientific and engineering talent and expertise within DOD, in addition to bolstering the capacity and skill of the U.S. workforce in advanced manufacturing and other critical technology areas (e.g., artificial intelligence).

Marcy E. Gallo, Analyst in Science and Technology Policy

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